

# Career and Technical Education Programs

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## Arts, Media & Communication

The District is filled with opportunities for creative, hardworking people with public speaking, visual or performing arts, or writing and editing skills. Whether you enjoy being in the spotlight or working behind the scenes as part of a team, choosing the Arts, Media & Communication career cluster can prepare you for success in fields such as broadcasting, advertising, journalism and music production and performance.

### Programs of Study

### Offered at:

Mass Media & Communications	<a href="#">Ballou High School</a> <a href="#">McKinley Technology High School</a> <a href="#">Roosevelt High School</a>
Communications Technology	<a href="#">Ballou STAY</a> <a href="#">Roosevelt STAY</a>

### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Writer or Author	\$78,000	Bachelor's degree
Editor	\$71,730	Bachelor's degree
Camera Operator in Television, Video or Motion Pictures	\$67,360	Postsecondary occupational award
Curator	\$63,970	Master's degree
Reporter or Correspondent	\$63,650	Bachelor's degree
Graphic Designer	\$62,670	Bachelor's degree
Multimedia Artist or Animator	\$61,980	Bachelor's degree
Broadcast Technician	\$60,190	Associate's degree
Photographer	\$48,320	Long-term on-the-job training
Library Technician	\$43,580	Postsecondary occupational award

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

### Mass Media & Communications

This program of study will expose students to the career fields of television and video production, radio broadcasting, and print and electronic media. By completing the program, students will learn about the roles of a production team, explore business aspects of the industry and gain experience in studio production. Students will also improve their communications and technical skills by researching, writing and editing news stories, radio advertisements and videotaping a television segment.

### Required Courses

- 10<sup>th</sup> Grade—Mass Media & Communications I

- 11<sup>th</sup> Grade—Mass Media & Communications II and III
- 12<sup>th</sup> Grade—Mass Media & Communications IV

### Communications Technology

Students in the Communications Technology program of study will have opportunities to learn about the telecommunications industry through hands-on projects with copper and fiber optics cable installation techniques. Employability skills will also be integrated throughout the curriculum to enhance student performance at work-based learning sites and then employment in the industry. After completing the program of study, students will have the opportunity to test for and earn their Network Cabling Specialist certification.

#### Required Courses

- 10<sup>th</sup> Grade—Communications Technology I
- 11<sup>th</sup> Grade—Communications Technology II
- 12<sup>th</sup> Grade—Communications Technology III

## Biotechnology & Environmental Science



If you are curious about the natural world, want to develop real CSI (crime scene investigation) skills or want to invent lifesaving vaccines, then building a strong background in Biotechnology & Environmental Science can equip you with the specialized skills you need. Professionals in this career cluster use their knowledge every day in DC to help prevent bioterrorism, create new energy sources, solve crimes, use living cells and their molecules to make useful products, and develop innovative strategies to protect the land, water and air.

### Programs

### Offered at:

Biotechnology	<a href="#">Ballou High School</a> <a href="#">McKinley Technology High School</a>
Environmental Science	<a href="#">Wilson High School</a>

### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Natural Sciences Manager	\$133,830	Bachelor's or higher degree, plus work experience
Chemist	\$117,220	Bachelor's degree
Microbiologist	\$106,120	Doctoral degree
Environmental Scientist or	\$102,790	Doctoral degree

Specialist, Including Health		
Biomedical Engineer	\$95,930	Bachelor's degree
Biological Scientist, All Other	\$95,150	Master's degree
Biochemist or Biophysicist	\$87,070	Bachelor's degree
Environmental Engineering Technician	\$55,140	Associate's degree
Biological Technician	\$49,510	Bachelor's degree
Environmental Science or Protection Technician, Including Health	\$44,880	Associate's degree

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

## Biotechnology

Students in the Biotechnology program will learn about the methods and skills that are essential to biotechnology, and have the ability to work with molecules of biotechnology. Students will also become adept at following standard operating procedures of the workplace, including the rigorous documentation needed in forensics and the manufacture of medicines.

### Required Courses

- 10<sup>th</sup> Grade—Biotechnology I
- 11<sup>th</sup> Grade—Biotechnology II and III
- 12<sup>th</sup> Grade—Issues of Biotechnology and Senior Project

## Environmental Science

Global vision for local action is the theme for the Environmental Science Pathway. The Environmental Science Pathway is for students who want to engage their minds, hearts and hands in support of sustainable development and management of earth's resources. Pathway students will join Eco-Teams and become part of an international effort to increase efficient use of resources in their schools and communities. In addition, seniors will complete a capstone internship project in order to gain real world experience. The development of geospatial literacy is a core component of this pathway. Students will receive honors laboratory science credit for the sequence of three classes and can earn college credit by taking the AP Environmental Science Examination.

### Prerequisite Course

- Biology I

### Required Courses

- 10<sup>th</sup> Grade—Environmental Science: Sustainable Earth
- 11<sup>th</sup> Grade—Environmental Science: Marine Science
- 12<sup>th</sup> Grade—Environmental Science: Urban Ecology

## Business, Finance & Marketing

Government and private industry organizations in DC need people who are skilled at managing money, buying and selling products or services, and making wise investments. If you enjoy working with numbers, are good at getting your friends to follow your lead or dream of starting your own company, then building skills in the fields of business, finance or marketing could pay huge dividends in the future.

### Programs of Study

### Offered at:

Finance	<a href="#">Dunbar High School</a> <a href="#">Spingarn High School</a> <a href="#">Wilson High School</a>
Business Administration	<a href="#">Coolidge High School</a> <a href="#">Dunbar High School</a> <a href="#">Luke C. Moore High School</a> <a href="#">Roosevelt High School</a> <a href="#">Roosevelt STAY</a> <a href="#">Spingarn STAY</a> <a href="#">Woodson High School</a>
Marketing	<a href="#">Luke C. Moore High School</a> <a href="#">Roosevelt High School</a> <a href="#">Woodson High School</a>

### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Chief Executive	\$201,010	Bachelor's or higher degree, plus work experience
Personal Financial Advisor	\$108,890	Master's degree
Advertising or Promotions Manager	\$96,280	Bachelor's or higher degree, plus work experience
Sales representative, Wholesale and Manufacturing, Technical and Scientific Products	\$95,670	Work experience in a related occupation
Budget Analyst	\$87,390	Bachelor's degree
Accountant or Auditor	\$83,400	Bachelor's degree
Insurance Sales Agent	\$76,240	Bachelor's degree
Loan Officer	\$75,130	Associate's degree
Market Research Analyst	\$72,880	Bachelor's degree
Real Estate Sales Agent	\$54,220	Bachelor's degree

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

## Finance

Students in the Finance program of study will learn about the major functions of banks, the basic principles of accounting, how to handle their personal finances, how to prepare a financial plan, and be introduced to elements of the insurance industry. Students will also participate in the National Financial Capability Challenge sponsored by the U.S. Department of the Treasury and a multitude of other activities to increase their knowledge of our global economy.

### Required Courses

- 10<sup>th</sup> Grade—Financial Planning and Banking & Credit
- 11<sup>th</sup> Grade—Insurance or AP Economics: Micro and Economics: Macro
- 12<sup>th</sup> Grade—Accounting

## Business Administration

Students in the Business Administration program of study will gain industry skills in the fields of business, finance, marketing and entrepreneurship. Technical skills are also emphasized as students will have the opportunity to earn basic computer certification and Microsoft Office Applications certifications. As part of their learning experience students will visit the Federal Reserve, investment firms and post-secondary institutions to explore their career options. Students will also have the opportunity to earn articulated college credits through the UDC Community College of the District of Columbia.

### Required Courses

- 10<sup>th</sup> Grade—Intro to Business
- 11<sup>th</sup> Grade—IC3 (Internet Core Computer Concepts) and Microsoft Office Apps
- 12<sup>th</sup> Grade—Business Communications

## Marketing

Students in the Marketing program of study will be introduced to the world of business and the processes and functions involved in marketing products to the consumer. Through textbooks, workbooks and activities developed by the Network for Teaching Entrepreneurship (NFTE), students will learn about product development, how to write a business plan and developing marketing pitches for the products. Students will have the opportunity to market and sell their products at various events organized by NFTE as well as participate in field trips and business presentations.

### Required Courses

- 10<sup>th</sup> Grade—Intro to Business
- 11<sup>th</sup> Grade—Marketing and Entrepreneurship
- 12<sup>th</sup> Grade—Sales and Services



## Construction & Design



Teams of professionals with construction and design skills built homes, buildings, schools, museums, monuments, roads and bridges in the district. Maintaining and renovating existing structures, building new ones and updating systems to meet the latest safety, efficiency and environmental standards requires a highly skilled workforce. If you enjoy designing, building or fixing things, know that opportunities are available across DC and around the world for people with solid skills and experience in this career cluster.

### Programs of Study

### Offered at:

Architecture and Design	<a href="#">Phelps High School</a>
Carpentry	<a href="#">Cardozo High School</a> <a href="#">Phelps High School</a>
Electrical	<a href="#">Cardozo High School</a> <a href="#">Phelps High School</a>
Heating, Ventilation, AC	<a href="#">Phelps High School</a>
Plumbing	<a href="#">Cardozo High School</a> <a href="#">Phelps High School</a>
Welding & Sheet Metal	<a href="#">Phelps High School</a>

## Careers to Consider

Career Idea	Average Annual Salary	Education Required
Construction Manager	\$104,990	Bachelor's degree
Architect, Except Landscape and Naval	\$90,840	Bachelor's degree
Cost Estimator	\$69,830	Bachelor's degree
Interior Designer	\$63,340	Associate's degree
Architectural or Civil Drafter	\$58,000	Long-term on-the-job training
Plumber, Pipefitter or Steamfitter	\$55,490	Long-term on-the-job training
Electrician	\$55,290	Bachelor's degree
Heating, Air Conditioning and Refrigeration Mechanic or Installer	\$55,070	Long-term on-the-job training
Carpenter	\$45,200	Long-term on-the-job training
Brickmason or Blockmason	\$43,650	Postsecondary occupational award

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

## Architecture

Students in the Architecture & Design program will learn to draw plans and develop skills for creating construction drawings for residential and commercial structures. In addition, students will learn about the history of architecture and how to select the proper tools needed for the profession.

### Required Courses

- 10<sup>th</sup> Grade—Architecture & Design I
- 11<sup>th</sup> Grade—Architecture & Design II and III
- 12<sup>th</sup> Grade—Architecture & Design IV

### Optional Courses

- 12<sup>th</sup> Grade—Landscape Architecture

## Carpentry

In the Carpentry program, students will learn carpentry concepts and be able to safely use basic carpentry hand and power tools. When students finish the program they will know how to apply carpentry concepts in the building environment.

### Required Courses

- 10<sup>th</sup> Grade—Carpentry I
- 11<sup>th</sup> Grade—Carpentry II and III

- 12<sup>th</sup> Grade—Carpentry IV

## Electrical

In the Electrical program, students will learn competencies in the safe use and care of electrician's tools, equipment and materials, and be able to read and interpret electrical wiring plans. By completing the program, students will be able to install, circuit breakers, fuses and relays.

### Required Courses

- 10<sup>th</sup> Grade—Electrical I
- 11<sup>th</sup> Grade—Electrical II and III
- 12<sup>th</sup> Grade—Electrical IV

## Heating, Ventilation, AC

Students in the HVAC program will study topics in cooling, heating and basic electricity, and will learn about air distribution systems. Students will also learn how to service HVAC systems.

### Required Courses

- 10<sup>th</sup> Grade—HVAC I
- 11<sup>th</sup> Grade—HVAC II and III
- 12<sup>th</sup> Grade—HVAC IV

*For more information about the Construction & Design Programs of Study at Cardozo, visit <http://dcstudentsctf.org/>. For Programs at Phelps visit <http://www.phelpsacehs.com>*

## Plumbing

In the Plumbing program, students will learn general and specific safety practices related to the plumbing trade, and be exposed to the principles and procedures for the layout of plumbing projects. Students will learn how to install and test water supply, piping and drains, and have the opportunity to apply their knowledge in class projects.

### Required Courses

- 10<sup>th</sup> Grade—Plumbing I
- 11<sup>th</sup> Grade—Plumbing II and III
- 12<sup>th</sup> Grade—Plumbing IV

## Welding and Sheet Metal

Students will learn about metallurgy, shop safety and welding theory, and be introduced to the types and trades of the welding and sheet metal industry. In addition, students will learn to operate basic equipment and safely apply the use, care and maintenance of the hand and power tools used in the industry.

### Required Courses

- 10<sup>th</sup> Grade—Welding & Sheet Metal I
- 11<sup>th</sup> Grade—Welding & Sheet Metal II and III
- 12<sup>th</sup> Grade—Welding & Sheet Metal IV

## Engineering



Engineers are problem solvers who use logic, creativity, math and science to improve the way things work. The metro DC area is home to multinational defense contractors and other companies that depend on a steady flow of engineering talent. Whether you are interested in building cleaner cars, faster airplanes or the next generation of portable media players, focusing on engineering will give you the academic foundation and project-based experience needed to turn your big ideas into actual products and processes.

### Programs of Study

### Offered at:

Engineering (Project Lead the Way)	<a href="#">Cardozo High School</a> <a href="#">Columbia Heights Education Campus (CHEC)</a> <a href="#">Dunbar High School</a> <a href="#">McKinley Technology High School</a> <a href="#">Phelps High School</a> <a href="#">Wilson High School</a>
Electro-Mechanical Technology Training	<a href="#">Cardozo High School</a>
Aviation Maintenance Technology	<a href="#">Cardozo High School</a>
Renewable Energy	<a href="#">Woodson High School</a>

## Careers to Consider

Career Idea	Average Annual Salary	Education Required
Engineering Manager	\$138,730	Bachelor's or higher degree, plus work experience
Aerospace Engineer	\$128,520	Bachelor's degree
Computer Hardware Engineer	\$107,180	Bachelor's degree
Mechanical Engineer	\$100,650	Bachelor's degree
Electrical Engineer	\$99,260	Bachelor's degree
Industrial Engineer	\$96,240	Bachelor's degree
Civil Engineer	\$90,940	Bachelor's degree
Electrical or Electronic Engineering Technician	\$64,580	Associate's degree
Civil Engineering Technician	\$51,510	Associate's degree

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

## Resources for Engineering

- Engineer Your Life, [www.engineeryourlife.org](http://www.engineeryourlife.org)
- NASA Jobs, [nasajobs.nasa.gov](http://nasajobs.nasa.gov)
- Project Lead The Way (PLTW), [www.pltw.org](http://www.pltw.org)
- Try Engineering, [www.tryengineering.org](http://www.tryengineering.org)

## Engineering (PLTW)

The Engineering program offers students in-depth, hands-on knowledge of engineering and technology-based careers. Using the Project Lead the Way curriculum, students will learn the basics of engineering design, and be able to choose from a variety of specialized engineering classes including Aerospace Engineering, Engineering Design, Biotechnical Engineering, Civil Engineering and Architecture and Computer Integrated Manufacturing.

### Required Courses

- 10<sup>th</sup> Grade—Intro to Engineering Design
- 11<sup>th</sup> Grade—Principles of Engineering and Digital Electronics
- 12<sup>th</sup> Grade—Engineering Design
- 12<sup>th</sup> Grade also chooses to take one of the following courses—Aerospace Engineering, Biotechnical Engineering, Civil Engineering and Architecture, or Computer Integrated Manufacturing

*For more information about the Engineering Programs of Study at Cardozo, visit [TransTechAcademy.com](http://TransTechAcademy.com)*

## Electro-Mechanical Technology Training

The Electro-Mechanical Technology Training program is a technical training curriculum in the areas of electricity, electronics and electro-mechanical technology. Students will receive industry standard training covering basic electrical concepts, electrical math, and scientific laws of force and motion.

### Required Courses

- 10<sup>th</sup> Grade—Intro to Engineering Design
- 11<sup>th</sup> Grade—Principles of Engineering and Digital Electronics
- 12<sup>th</sup> Grade—Electro-Mechanical III and IV

### Aviation Maintenance Technology

Students in the Aviation Maintenance Technology program will learn about piloting, aircraft maintenance and repair, air traffic control, airport operations, and aviation history. In addition, students will learn how to address aviation maintenance issues and Federal Aviation Administration policies and procedures.

#### Required Courses

- 10<sup>th</sup> Grade—Intro to Aviation
- 11<sup>th</sup> Grade—Aviation Maintenance Technology I and II
- 12<sup>th</sup> Grade—Aviation Maintenance Technology III and IV

### Renewable Energy

Students in the Renewable Energy program study the basic fundamentals of green technologies, sustainable architecture, conservation, and green power, including solar photovoltaics (PV) and wind power. Students will be prepared to achieve industry certifications from the Electronic Technicians Association (ETA) and Certified Energy Practitioners (CEP).

#### Required Courses

- 10<sup>th</sup> Grade—Green Building Technology
- 11<sup>th</sup> Grade—Generating Clean Electronics & Green Electronics and Sustainable Conservation
- 12<sup>th</sup> Grade—Green Technology Program, or Solar PV and Wind Power, or Energy Auditing and Smart Grid Technology

## Health & Medical Sciences

The Metro DC area has more than 15 public, private or military hospitals and numerous federal agencies focused on health and medical sciences professionals are in high demand. As a health care worker, you may enjoy helping people directly or prefer to work in a laboratory or office setting. Either way, building knowledge and experience in this cluster will prepare you for a world of challenging and meaningful careers.

### Programs of Study

### Offered at:

Biomedical Sciences	<a href="#">Eastern High School</a> <a href="#">Wilson High School</a>
Emergency Medical Services	<a href="#">Anacostia High School</a>
Nursing	<a href="#">Anacostia High School</a>

### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Dentist, General	\$168,200	Doctoral or professional degree
Family or General Practitioner	\$144,190	Doctoral or professional degree
Pharmacist	\$111,290	Doctoral or professional degree
Medical or Health Services Manager	\$105,350	Bachelor's or higher degree, plus work experience
Medical Scientist, Except Epidemiologist	\$103,970	Doctoral or professional degree
Dental Hygienist	\$90,460	Associate's degree
Physical Therapist	\$86,320	Doctoral or professional degree
Registered Nurse	\$75,500	Associate's degree
Dietitian or Nutritionist	\$73,650	Bachelor's degree
Licensed Practical or Licensed Vocational Nurse	\$48,240	Postsecondary occupational award

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

### Resources for Health & Medical Sciences

- Biomedical Science Careers Program, [www.bscp.org](http://www.bscp.org)
- Lifeworks, [science.education.nih.gov/LifeWorks.nsf/feature/index.htm](http://science.education.nih.gov/LifeWorks.nsf/feature/index.htm)

### Biomedical Sciences

Students in the Biomedical Sciences program will develop the foundation necessary for student success in health care related fields by learning about the concepts of human medicine and how human body systems work. Students, using real-world cases, will take the role of biomedical professionals and work



together to solve medical mysteries, and be introduced to various medical interventions that extend and improve the quality of life.

Required Courses

- 10<sup>th</sup> Grade—Principles of the Biomedical Sciences
- 11<sup>th</sup> Grade—Human Body Systems and Medical Interventions
- 12<sup>th</sup> Grade—Biomedical Capstone Project

## Emergency Medical Services

Students will gain core knowledge and skills common to all health occupations, and learn about the structure and function of human body systems. By completing the program, students will develop the skills needed to become nationally certified EMTs.

Required Courses

- 10<sup>th</sup> Grade—Health Career Exploration
- 11<sup>th</sup> Grade—Anatomy & Physiology
- 12<sup>th</sup> Grade—EMS and Clinical EMS

## Nursing

In the Nursing program, students will learn about the structure and function of human body systems, and gain core knowledge and skills common to all health occupations. Students will be able to demonstrate knowledge in the basic principles of nursing, including the role of the certified nurse assistant on a health care team.

Required Courses

- 10<sup>th</sup> Grade—Health Career Exploration
- 11<sup>th</sup> Grade—Anatomy & Physiology
- 12<sup>th</sup> Grade—Nursing and Clinical Nursing



## Hospitality & Tourism



The District welcomes approximately 15 million visitors each year, creating a huge local demand for qualified hospitality and tourism professionals. Rewarding careers are available in the greater Washington metropolitan region's more than 600 hotels, in the about 100 restaurants located in downtown DC, and in the district's numerous museums, tourist attractions and convention centers. If you enjoy meeting new people or learning about new cultures, explore the wide world of opportunities available in this high-energy, high-growth cluster.

### Programs of Study

### Offered at:

Culinary Arts	<a href="#">Ballou STAY</a> <a href="#">Roosevelt High School</a> <a href="#">Roosevelt STAY</a>
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### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Food Service Manager	\$66,090	Work experience in a related occupation
Meeting or Convention Planner	\$61,900	Bachelor's degree
Travel Agent	\$42,400	Postsecondary occupational award
First-Line Supervisor/Manager of Food Preparation or Serving Workers	\$38,790	Work experience in a related occupation
Baker	\$29,610	Long-term on-the-job training
Concierge	\$29,420	Moderate-term on-the-job

		training
Cook, Institution and Cafeteria	\$29,050	Moderate-term on-the-job training
Tour Guide or Escort	\$26,770	Moderate-term on-the-job training
Cook, Restaurant	\$26,290	Long-term on-the-job training
Waiter or Waitress	\$24,590	Short-term on-the-job training

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

## Culinary Arts

The Culinary Arts program of study exposes students to the fundamentals of cooking, sanitation and safety in the foodservice industry. Students learn knife skills, how to prepare soups, stocks and sauces and complete menus. Students will also have the opportunity to earn their ServSafe certification which is essential to study or work in the foodservice industry. This certification will convert to college credits upon enrollment in a culinary postsecondary institution. Students will also learn about the business of the hospitality industry as they participate in field trips to restaurants, hotels, postsecondary institutions and wholesale food companies.

### Required Courses

- 10<sup>th</sup> Grade—Culinary I
- 11<sup>th</sup> Grade—Culinary II
- 12<sup>th</sup> Grade—Culinary III

## Human Services



While this cluster spans a wide range of careers, including teaching, social work and counseling, helping people is the focus that ties it together. The district is filled with people young and old who need caring hands to help them through life. If you are a compassionate person who wants to work in a field in which you can assist people in reaching their highest potential for education, fitness, safety, independence, emotional health or overall quality of life, there's a place for you in Human Services.

### Programs of Study

### Offered at:

Early Childhood Education	<a href="#">Columbia Heights Education Campus (CHEC)</a>
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### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Arbitrator, Mediator or Conciliator	\$156,800	Bachelor's or higher degree, plus work experience
Psychologist, All Other	\$103,040*	Master's degree
Sociologist	\$102,430	Master's degree
Clinical, Counseling or School Psychologist	\$74,490	Doctoral degree
Child, Family or School Social Worker	\$56,860	Bachelor's degree
Mental Health or Substance	\$54,100	Master's degree

Abuse Social Worker		
Probation Officer or Correctional Treatment Specialist	\$54,220	Bachelor's degree
Clergyperson	\$49,230	Master's degree
Hairdresser, Hairstylist, or Cosmetologist	\$33,110	Postsecondary occupational award
Preschool Teacher, Except Special Education	\$32,850	Postsecondary occupational award

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

\*Current statistic unavailable, based on May 2009 data

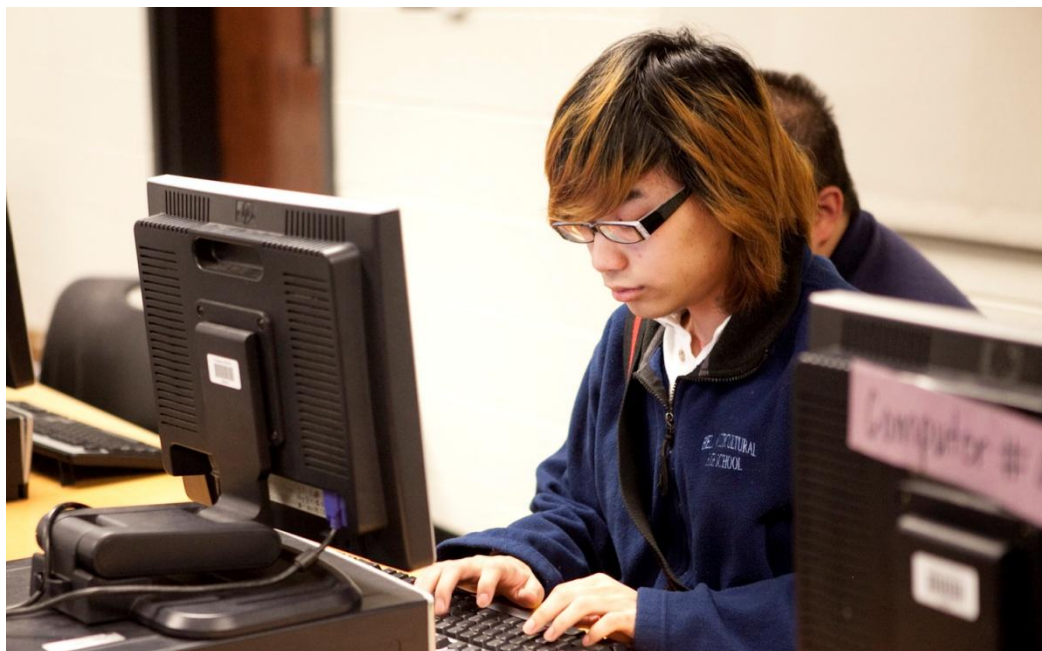
## Early Childhood Education

In the Early Childhood Education program of study students learn about child development from birth through the early stages. The program focuses on the development of motor skills, as well as social, emotional and language development. Students study the various stages of childhood, parenting styles and how effective childcare influences development. This program of study is aligned with the national Child Development Associate (CDA) certification endorsed by the Council for Professional Recognition. Students will have the opportunity to earn their CDA and intern in child development centers.

### Required Courses

- 10<sup>th</sup> Grade—Early Childhood Education I
- 11<sup>th</sup> Grade—Early Childhood Education II and History of Philosophy of Early Childhood Education
- 12<sup>th</sup> Grade—Principles of Child Development

## Information Technology



Students who like computers, smart phones and other high-tech tools can choose careers in which the work might seem more like play. Graduates of the Information Technology career cluster might invent the next generation of video games, develop interactive website tools, or create sophisticated solutions for medicine, manufacturing or military clients across the district and around the globe.

### Programs of Study

### Offered at:

Interactive Media	<a href="#">Anacostia High School</a> <a href="#">Cardozo High School</a> <a href="#">Columbia Heights Education Campus (CHEC)</a> <a href="#">McKinley Technology High School</a> <a href="#">Wilson High School</a>
Networking	<a href="#">Columbia Heights Education Campus (CHEC)</a> <a href="#">Dunbar High School</a> <a href="#">McKinley Technology High School</a> <a href="#">Phelps High School</a> <a href="#">Woodson High School</a>
Computer Science*	Coming soon! Banneker High School Columbia Heights Education Campus McKinley Technology High School Spingarn High School

	Wilson High School
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### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Computer or Information Systems Manager	\$141,770	Bachelor's or higher degree, plus work experience
Computer or Information Research Scientist	\$113,300	Doctoral degree
Computer Hardware Engineer	\$107,180	Bachelor's degree
Computer Occupations, All Other	\$102,940	Associate's degree
Database Administrator	\$90,590	Bachelor's degree
Network or Computer Systems Administrator	\$88,720	Bachelor's degree
Electrical or Electronics Repairer, Powerhouse, Substation and Relay	\$63,330	Postsecondary occupational award
Computer Support Specialist	\$60,920	Associate's degree
Telecommunications Equipment Installer or Repairer, Except Line Installer	\$58,580	Postsecondary occupational award
Computer, Automated Teller or Office Machine Repairer	\$42,970	Postsecondary occupational award

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

### Interactive Media

Students in the Interactive Media program will learn about the digital processes and techniques for graphic design, and gain an understanding of digital media and multimedia programming concepts. Students will also have the opportunity to learn about game programming concepts and design and create web pages.

#### Required Courses

- 10<sup>th</sup> Grade—Computer Graphics or Two-Dimensional Concepts-Graphic Design
- 11<sup>th</sup> Grade—Intro to Digital Media and Programming for Digital Media
- 12<sup>th</sup> Grade—Web Development or Interactive Media I and II

### Networking

In the Networking program, students will learn the fundamentals of computer hardware and software, and how to install, configure and troubleshoot network devices. When students complete the required courses, they will be able to configure an internet server and troubleshoot internet connectivity.

#### Required Courses

- 10<sup>th</sup> Grade—IT Essentials: PC Hardware and Software
- 11<sup>th</sup> Grade—Networking for Home and Small Businesses
- 12<sup>th</sup> Grade—Working at a Small to Medium Business ISP and CISCO Cybersecurity



## Computer Science

\*Starting in the 2012-2013 school year, DCPS will be building a Computer Science Program of Study. Schools and courses may change as the program develops.

Students in the Computer Science program will learn computational thinking skills and exercise these skills in at least two different programming languages. In the capstone course, students will study cyber security and explore computer and internet security issues from multiple perspectives.

### Proposed Courses

- 9<sup>th</sup> Grade—Intro to Computer Science
- 10<sup>th</sup> Grade—Exploring Computer Science
- 11<sup>th</sup> Grade—AP Computer Science
- 12<sup>th</sup> Grade—Cybersecurity, Artificial Intelligence

## Law, Public Safety & Security



Protecting people, property and legal rights can be physically and psychologically demanding—and sometimes dangerous. For students who want to serve their local communities, however, numerous job opportunities await close to home in Law, Public Safety & Security.

### Programs of Study

### Offered at:

Law Enforcement	<a href="#">Anacostia High School</a>
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### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Arbitrator, Mediator, or Conciliator	\$156,800	Bachelor's or higher degree, plus work experience
Lawyer	\$155,750	Doctoral or professional degree
Administrative Law Judge, Adjudicator and Hearing Officer	\$123,780	Bachelor's or higher degree, plus work experience
Paralegal or Legal Assistant	\$63,560	Associate's degree
Judicial Law Clerk	\$62,520	Law degree
Title Examiner, Abstractor, or Searcher	\$48,320	Postsecondary occupational award, plus work experience
Court Reporter	\$42,650	Postsecondary occupational award



Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

### Law Enforcement

Students in the Law Enforcement program of study will become familiar with the U.S. legal and law-enforcement systems, their philosophical and historical foundations, issues of power and fairness, and mechanisms for advocacy and policy and will explore related careers. In addition, students will develop an understanding of law and public safety careers through research and hands-on projects.

#### Required Courses

- 10<sup>th</sup> Grade—Foundations in Law and Justice
- 11<sup>th</sup> Grade—Foundations in Law Enforcement
- 11<sup>th</sup> Grade—Criminal Justice Systems
- 12<sup>th</sup> Grade—Investigations

## Transportation

Planes, trains, trucks and cars move people, goods and services throughout the metropolitan DC area 24 hours a day, seven days a week. Keeping all these complex vehicles in motion requires ongoing service and maintenance, as well as safe operation and repairs, by highly skilled technicians. If you enjoy working with high-tech tools, building hands-on transportation skills today can put you on the fast track to future career success.

### Programs of Study

### Offered at:

Automotive Technology	<a href="#">Ballou High School</a> <a href="#">Ballou STAY</a>
Autobody Collision Repair	<a href="#">Spingarn High School</a> <a href="#">Spingarn STAY</a>

### Careers to Consider

Career Idea	Average Annual Salary	Education Required
Air Traffic Controller	\$135,090	Long-term on-the-job training
Transportation, Storage or Distribution Manager	\$102,910	Work experience in a related occupation
Transportation Inspector	\$94,840	Work experience in a related occupation
Logistician	\$85,880	Bachelor's degree
First-Line Supervisor/Manager of Transportation and Material-Moving Machine and Vehicle Operators	\$62,710	Work experience in a related occupation
Metro Operator (Subway or Streetcar Operator)	\$59,400 <sup>1</sup>	On-the-job training
Automotive Service Technician or Mechanic	\$46,140	Postsecondary occupational award
Production, Planning or Expediting Clerk	\$49,060	Moderate-term on-the-job training
Truck Driver, Heavy and Tractor-Trailer	\$41,660	Moderate-term on-the-job training
Dispatcher, Except Police, Fire or Ambulance	\$38,120	Moderate-term on-the-job training

<sup>1</sup> National wages from U.S. Bureau of Labor Statistics; data for District of Columbia metro area unavailable.

Sources: DC Department of Employment Services, Office of Labor Market Research & Information; U.S. Bureau of Labor Statistics May 2011 State Occupational Employment and Wage Estimates for the greater DC area, which includes parts of Maryland, Virginia and West Virginia.

### Automotive Technology

Students will develop troubleshooting skills in the field of automotive technology and learn to problem solve issues related to technical improvements within the automotive industry. By the end of the

program, students will acquire knowledge and skills in preparation for industry certification in service areas.

Required Courses

- 10<sup>th</sup> Grade—Automotive Tech I and II
- 11<sup>th</sup> Grade—Automotive Tech III and IV

Optional Courses

- 12<sup>th</sup> Grade—Automotive Tech V, VI, VII, Auto Tech Internship, and Auto Tech Seminar

## Autobody Collision Repair

Students will be introduced to autobody construction, service and repair, and receive technical skill training in areas such as disassembly, frame repair and alignment, and painting and inspection. In addition, students will gain knowledge about shop tool maintenance, customer relations, and estimating job costs.

Required Courses

- 10<sup>th</sup> Grade—Autobody Collision Repair I and II
- 11<sup>th</sup> Grade—Autobody Collision Repair III and IV

Optional Courses

- 12<sup>th</sup> Grade—Autobody Collision Repair V and